REALPRODUCER PLUS® USER'S GUIDE

Version 8.5 for UNIX

CONTENTS

INTRODUCTION TO REALPRODUCER PLUS

Welcome to RealProducer Plus from RealNetworks. This tool converts standard audio and video into streaming media clips. RealProducer Plus is perfect for either novice or advanced content creators.

Using RealProducer Plus, anyone can easily create streaming media from a variety of sources. Convert audio or video files, record directly from media devices, or use RealProducer Plus to broadcast and stream live content.

New Features in RealProducer Plus

RealProducer Plus 8.5 includes upgrades in how you can create streaming audio and video. This section briefly describes some of these upgrades from RealProducer Plus G2.

RealAudio 8

- better, high-performing audio at high bit rates
- supports DV audio sampled at 48 kHz
- improved stereo output at a wide range of bit rates

RealVideo 8

- can give you near-DVD quality streaming video
- an array of video filters that increase image quality, including an improved de-interlacing filter
- You can record from uncompressed QuickTime 3.0 and 4.0 files.

About This Manual

Chapter 1: Installing RealProducer Plus explains installation procedures and provides information about system requirements for installing and using RealProducer Plus.

Chapter 2: Streaming Media Basics introduces you to the RealSystem® and its components, describes the importance of knowing your audience, and shows you how SureStream™ works.

Chapter 3: Recording Tips provides information for increasing performance, using RealProducer Plus more effectively, creating high-quality audio and video, and editing file information.

Chapter 4: Using the Command Line shows you how to use RealProducer Plus features with the command line.

For More Information

For additional information about using streaming media effectively and how to create multimedia presentations with your clips, refer to the *RealSystem Production Guide*, available for download from the RealNetworks Web site at:

- **http://service.real.com/help/library/index.html**

For technical support with RealSystem, please fill out the form at:

- **http://service.real.com/contact/email.htm**

The information you provide in this form will help technical support personnel to give you a prompt response. For general information about RealNetworks' technical support, visit:

- **http://service.real.com/help/call.html**

INSTALLING REALPRODUCER PLUS

Installing RealProducer Plus is quick and easy. You can download RealProducer Plus from the RealNetworks Website or install it from a CD-ROM. Before you begin, make sure your computer meets the necessary system requirements for your operating system. See "System Requirements" on page 5 for more information.

How to Install

Follow this procedure to install the product onto either your Linux or your Solaris machine.

➤ To install RealProducer Plus on Linux:

1. Download the installation program, or insert the CD-ROM into your drive.

2. Make sure your CD drive is mounted properly, if installing from a CD.

3. Decompress and untar the download file:

   a. Change directories to the directory that contains the download file.

   b. Display the filename of the download file by entering:
      ```
      ls
      ```

   c. Unpack the top level distribution by entering:
      ```
      gunzip -cd <filename> | tar xvf -
      ```

   d. This will unpack the following files:
      ```
      install
      README
      LICENSE
      realproducerplus.tar
      ```

4. Start the RealProducer Plus installer by entering:
   ```
   ./install
   ```

The installer begins by preparing your system for RealProducer Plus. When complete, the installer shows the Software License agreement.

5. Specify the directory where you will install RealProducer Plus. The default directory is `/usr/local/realproducer-8.5`. If this directory exists, you will be asked to install in a different directory or uninstall the previous version.

   The install program installs all necessary programs and files.

6. Enter the serial number when prompted.

7. The install program asks if you want to create symbolic links and whether or not you want to view the Readme file. You can enter either `Y` or `N` for each question according to your preferences.

➤ To install RealProducer Plus on Solaris:

1. Download the installation program, or insert the CD-ROM into your drive.

2. Make sure your CD drive is mounted properly, if installing from a CD.

3. Decompress and untar the download file:

   e. Change directories to the directory that contains the download file.

   f. Display the filename of the download file by entering:
      ```
      ls
      ```

   g. Unpack the top level distribution by entering:
      ```
      uncompress -cd realproducer-8.5b1_solaris.tar.Z | tar xvf -
      ```

   h. This will unpack the following files:
      ```
      install
      README
      LICENSE
      realproducerplus.tar
      ```

4. Start the RealProducer Plus installer by entering:
   ```
   ./install
   ```

   The installer begins by preparing your system for RealProducer Plus. When complete, the installer shows the Software License agreement.

5. Specify the directory where you will install RealProducer Plus. The default directory is `/usr/local/realproducer-8.5`. If this directory exists, you will be asked to install in a different directory or uninstall the previous version.

   The install program installs all necessary programs and files.

6. Enter the serial number when prompted.

7. The install program asks if you want to create symbolic links and whether or not you want to view the Readme file. You can enter either Y or N for each question according to your preferences.

System Requirements

This section lists the basic hardware and software requirements needed to run RealProducer Plus for your specific UNIX platform.

In addition to normal hardware and software requirements, you must possess any of the following if you want live capture and recording:

- VHS, S-VHS, or Beta-SP video player
- Digital Video Disk (DVD) player
- live video camera and microphones

Linux Requirements

The following table lists minimum and recommended requirements for the Linux platform, depending on whether you are recording files or live input.

File Recording - Linux Requirements

Requirement	Minimum (audio-only)	Recommended (video)
Version	Linux 2.0.x	Linux 2.2.x with Video4linux1 installed
CPU	Pentium 120	Pentium II 200
RAM	32 MB	64 MB
Hard Disk space (software)	8 MB	
Hard Disk space (data)	500 MB	1 GB

Live Recording - Linux Requirements

Requirement	Minimum (audio-only)	Recommended (video)
Version	Linux 2.0.x	Linux 2.2.x with Video4linux1 installed
CPU	Pentium 200 with MMX	Pentium III

Live Recording - Linux Requirements

Requirement	Minimum (audio-only)	Recommended (video)
RAM	32 MB	128 MB
Hard Disk space (software)	8 MB	
Hard Disk space (data)	500 MB	1 GB
Video Card	none for audio-only recording	any BT848 based video capture device, such as the Osprey 100
Sound Card	16-bit sound card or better with OSS drivers installed	

Additional software requirements include:

- libNoVersion.so.1
- libc.so.6 (also known as glibc2)
- libdl.so.2
- libm.so.6
- ld-linux.so.2
- Video4Linux 1 capture system

Solaris Requirements

The following are recommended requirements for the Solaris platform.

Solaris Requirements

Requirement	Minimum (audio-only)	Recommended (video)
Version	Solaris 2.6	Solaris 7
CPU	Pentium 200 with MMX	Pentium II 400 MHz
RAM	32 MB	64 MB
Hard Disk space (software)	8 MB	
Hard Disk space (data)	500 MB	1 GB
Video Card	Osprey 150	Osprey 1500 or SunVideo Plus
Sound Card	16-bit sound card or better	

STREAMING MEDIA BASICS

This chapter introduces you to streaming media and RealSystem 8. It shows you the different types of streaming media that you can create with RealProducer Plus, what you need to get started, and discusses the importance of knowing your audience.

Although you do not need to know this information in order to use RealProducer Plus for basic tasks, it is recommended that you have a working knowledge of these topics.

What is Streaming Media?

Streaming media created by RealProducer Plus can be either RealAudio® or RealVideo®. Before the advent of streaming media, you had to wait for a media file to download from the Internet or a network server in order to experience it. When you create streaming media, users can view it almost instantly.

Streaming media allows you to send small packets of information over a network connection. The user receives the information packets and plays your media piece by piece. The process is almost invisible to the user, except for a small amount of buffering at the beginning.

Step by Step: Streaming with RealSystem 8

RealProducer Plus is an integral part of the RealNetworks RealSystem 8. Below is a brief overview of the steps that you can take to create streaming media and put it on the Internet, or your company's Intranet.

Step 1: Start with a Media Source—File or Live Input

RealProducer Plus creates streaming media from two kinds of sources: audio and video. Whether the source is a digital file or a live feed directly to your computer, you can convert it into a RealMedia clip.

If you are creating a digital file for your source, you should save it under the following formats:

- Audio (.au)
- Waveform audio (.wav)
- 24-bit or 32-bit uncompressed QuickTime (.mov)

Step 2: Record Your Source into a RealMedia Clip

RealProducer Plus takes your input media source and records it into a RealMedia clip. Your clip can be saved as a file to be streamed at a later time, or it can be sent directly to a server as a live broadcast. The figure below shows how RealProducer Plus converts your source into RealMedia.

Recording RealMedia Clips
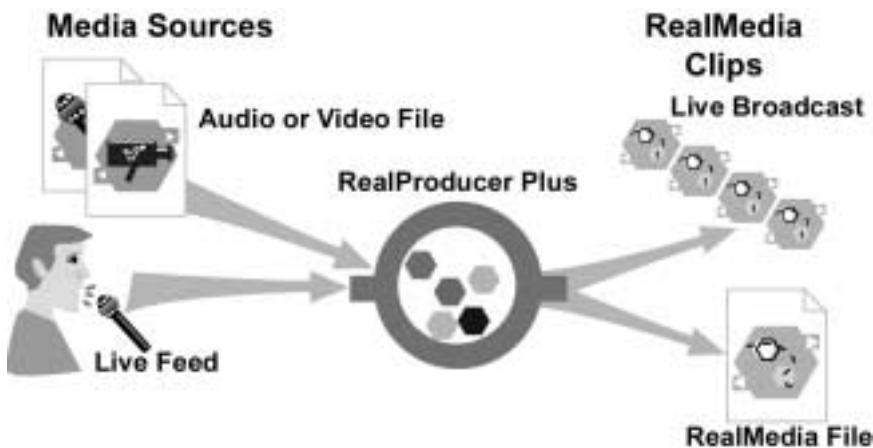
RealMedia clips are also known separately as RealAudio and RealVideo.

RealAudio

A RealAudio clip is created by converting an audio file or by recording from a microphone (or other audio input) onto your computer. RealProducer Plus

uses various audio codecs (compression/decompression algorithms) to convert your standard audio into a format that can be streamed.

You also have various compression options based on the type of audio you are converting: voice, voice with background music, music only, or stereo music. As expected, the quality of the original audio will have the greatest effect on the ultimate quality of the compressed audio.

RealVideo

A RealVideo clip is created by converting a video file or by capturing from a video source, such as a video camera or video cassette player, to your computer via a video capture card. RealProducer Plus converts different attributes of the video—such as frame rate, type of motion, and size of the image—into a RealVideo clip using a video codec.

You can also set up RealProducer Plus to use a variety of video filters that are desgined specifically for creating streaming video from different video inputs.

Step 3: Transfer Your Clips to a Server

If you are broadcasting your streaming media directly to a server, you can skip this step.

Once your streaming media clip is created, you will want to show it to your audience using a server. This server can be either a RealServer® or a standard Web server. If you plan on using a Web server, you will not be able to take advantage of many features, such as SureStream.

Step 4: Stream Your Clip

You will use a RealServer or a Web server to stream your clip to the Internet (or to an Intranet). The RealServer is a separate software product, created by RealNetworks, that allows you to stream live or recorded RealAudio and RealVideo files to anyone using a RealPlayer. The server can work with Web servers to stream media over the Internet or to users on a corporate Intranet.

For more information on how you can obtain and use a RealServer, go to the RealNetworks Web site at **http://www.realnetworks.com** and look for the links to this product.

Step 5: Play the Clip

Once your audience has connected successfully to your streaming media clip, they will want to experience it. A RealPlayer is all they need. Two versions of the RealPlayer are available from RealNetworks, a free version and a Plus version. The RealNetworks Web site (**http://www.realnetworks.com**) has more information about each version and how to install and use them.

Know Your Audience

Whenever you create a RealMedia clip, you should always keep in mind the connection speed of your audience. Are they using lower-speed modems, or are they playing your clip over a high-speed network?

This section introduces you to your target audience, and shows you a way to increase your audience: SureStream.

About Target Audiences

When you select a specific target audience, you are actually specifying a maximum bandwidth for your RealMedia stream at the selected target audience. Bandwidth, measured in kilobits per second (Kbps), is the amount of data that can be sent through an Internet or network connection during a set period of time. Standard modems are commonly referred to by the bandwidth they are able to receive--for example, 28.8 and 56 Kbps.

In addition to these standard audiences, you can record clips for connection speeds of 100 Kbps, 200 Kbps, or higher. These higher bandwidths, however, are generally more typical for audiences that use corporate Local Area Networks (LANs) or DSL modems.

Keep in mind that the maximum bandwidth a connection is capable of is greater than the average bandwidth carried across it. For that reason, 28 Kbps connections actually only use approximately 20 Kbps, while a 56 Kbps connection actually uses about 34 Kbps.

Normally, these constraints can affect your recording in many ways. Sometimes you have to compromise between reaching the largest audience (with the lowest-speed connections) and the quality of your work. Fortunately, RealProducer Plus enables you to record for a number of target audiences simultaneously using SureStream.

About SureStream

With SureStream recording you can reach the widest possible audience, and provide all users with the best listening and viewing experience optimized for their bandwidth.

There are several advantages to using SureStream. You can create:

- a single RealMedia clip recorded for multiple target audiences

- a clip that will automatically switch to a lower bandwidth during poor network conditions

- a clip that is compatible with an older version of RealPlayer

SureStream RealMedia files can combine several different streams that take advantage of any or all of these features.

For example, you can record a video clip for both 28 Kbps and 56 Kbps audiences, and RealPlayer will automatically use the correct stream based on the user's connection speed. Meanwhile, a separate stream can exist for people who still own an older version of RealPlayer so that they can experience your clip. All streams are contained within a single RealMedia file.

Keep in mind that if you are broadcasting SureStream files, you must use a RealNetworks RealServer.

RECORDING TIPS

Because there is no single best process for delivering all types of streaming audio and video, this chapter shows you various tips on how to get the most out of your RealProducer Plus recording session.

This chapter discusses how to:

- improve RealProducer Plus performance
- produce high-quality audio
- produce high-quality video

Improving RealProducer Plus Performance

A number of factors can influence how much of your system's resources are used during a recording session. Use these tips to get the best performance possible.

Multiple Streams

Generally, the more streams you create in a SureStream clip, the more processing power you need. Recording for more than two or three customized target audiences that each use a broad range audio codecs, or creating a 5.0 compatible stream can all effect performance.

Producing High-Quality Audio

This section describes how to successfully create quality sound for RealMedia clips. It gives you overall audio tips, describes audio sampling rates, and shows you how to use the audio level meter.

General Audio Tips

Follow these tips in order to get the best quality from your different audio sources.

- Use high-quality source files or a recording input device.

- If you are not doing a live broadcast, capture or "digitize" the sound to a supported file format such as a .wav or .au file whenever possible.

  This allows you to use a sound editor to adjust the amplitude of your signal to maximize the available dynamic range. If you do not adjust the signal, the resulting RealMedia file may sound flat.

- If your original audio file signal exceeds the acceptable amplitude range, the file may be "clipped." Clipping can give rise to clicks or pops on playback. If your source file contains a clipped signal, your final RealMedia file will have high-frequency background noise or static. Lowering the input volume will help reduce clipping.

- When encoding live-source audio, you have less opportunity to manipulate your input signal. Be sure that volume levels are prepared and tested before encoding.

- Cut any unnecessarily long silences from the beginning or end of the output file to conserve space.

Audio Sampling Rates

The following sampling rates for your source audio are supported for this version of the product. For fuller sound, use the higher sampling rates and a better audio codec.

- 8000 Hz

- 11025 Hz

- 16000 Hz

- 22050 Hz

- 32000 Hz

- 44100 Hz

- 48000 Hz

Producing High-Quality Video

This section describes how to successfully create quality video for RealMedia clips. Follow these tips in order to get the best quality from the different types of video sources.

Recommended Video Types

In order to get high quality output, your video source should meet the following requirements organized by video type.

QuickTime Files

- Use 24-bit or 32-bit RGB uncompressed QuickTime video files.
- Use 8-bit or 16-bit mono and stereo audio.

Live Video

- When using an external video source, start with the best possible quality. In particular, different video formats yield different qualities when captured (digitized).

  The common video formats in order of quality are:

  - Betacam-SP, also known simply as Beta. This format is common among video production professionals.
  - Laserdisc or DVD
  - S-VHS or Super-VHS
  - VHS

- Video playback devices commonly have two types of video outputs, S-video and composite. S-video produces better results.

USING THE COMMAND LINE

You use the command line for all functions associated with RealProducer Plus. You can set up your input/output options, encoding options, preferences, and video codec options using the command line.

Command Line Description

The command line gives you the conversion and broadcasting capability of the RealProducer Plus main interface, but also allows you to create a batch file and record multiple .rm files with a single command.

➤ To use the command line encoder:

1. Open a command line window.

2. Change the directory to the main RealProducer Plus directory.

3. Type `realproducer <options>` where `<options>` are the recording options you specify to record your media. See the tables below for more details.

   Note

   You must specify an input by using one of the -i or -l options.

4. The command line RealProducer Plus converts the specified input into RealAudio or RealVideo once you press **Enter**.

Options

The following tables describe each flag that you can use on the command line. These flags are divided into Input/Output options, Encoding options, and Preferences options..

Input/Output Options

Syntax	Description	Default Value	Example
-i <input file>	name and directory of the input file	no default	`-i /tmp/sample.avi`
-l <audio>,<video>	specifies live audio and video input(s), where <audio> and <video> represent the values assigned to an audio card driver and a video card driver; ignores the -i option	0,0 0 - primary audio card 0 - primary video card	`-l 3,1`
-o <output file>	name of the output file	<input file>.rm	`-o /tmp/sample.rm`
-s "<server[:port]>/ <file>"	name of the output server, port, and file	port defaults to 4040; output file must be specified	`-s "myserver:6060/ sample.rm"`
-u <user name>	the user name to log on to the server	no default	`-u myname`
-p <password>	the password for the user name	no default	`-p mypassword`
-x <hh>:<mm>:<ss>	maximum amount of time to record	continuous	`-x 01:20:30`

-tp 0 or 1	turns on two-pass encoding
	   0 - off
	   1 - on
		0 - off	`-tp 1`

Encoding Options

Syntax	Description	Default Value	Example
-t <target1>,<target2>,...	target audiences for the recording; use any of the following numbers: 0 - 28 Kbps Modems 1 - 56 Kbps Modems 2 - single ISDN 3 - dual ISDN 4 - DSL/cable modem 5 - corporate LAN 6 - 256K DSL/cable modem 7 - 384K DSL/cable modem 8 - 512K DSL/cable modem	0 - 28 Kbps modem	`-t 1,2,3`
-a 0, 1, 2, or 3	audio format; use one of the following numbers: 0 - voice only 1 - voice with background music 2 - music 3 - stereo music	0 - voice only	`-a 2`
-v 0, 1, 2, or 3	video quality; use one of the following numbers: 0 - normal motion 1- smoothest motion 2 - sharpest image 3 - slide show	0 - normal motion	`-v 2`
-f 0 or 1	file type; use one of the following numbers: 0 - Single Rate 1- SureStream	1 - SureStream	`-f 0`
-m <file>	use the specified settings configuration file; overrides -t and -a; see below for more information	none	`-m mysettings.txt`
-b <title>	the title for the recorded clip	none	`-b "The Title"`
-h <author>	the author for the recorded clip	none	`-h "Joe Schmoe"`
-c <date>	the copyright owner and date for the recorded clip	none	`-c "My Company 2000"`

Encoding Options

Syntax	Description	Default Value	Example

-y 0 or 1	enable audio recording;
	  0 - no
	  1 - yes
		1- yes	`-y 0`

-z 0 or 1	enable video recording;
	  0 - no
	  1 - yes
		1 - yes	`-z 0`

-vx <width>,<height>	input video capture size (in pixels)	176,144	`-vx 160,120`
-os <width>,<height>	output video size (in pixels)	original size	`-os 144,32`
-q <description>	a brief description of the clip; use quotes if spaces are used	none	`-q "a gripping story about a man and his pet banana slug"`
-n <keywords>	words that will help search engines locate your clip	none	`-n "pets slugs"`

Preferences Options

Syntax	Description	Default Value	Example

-k 0 or 1	allow download;
	  0 - no
	  1 - yes
		0 - no	`-k 1`

-ar 1, 2, 3, or 4	audience rating;
	  1 - general, all ages
	  2 - parental guidance
	  3 - adult supervision required
	  4 - adults only
		1 - general	`-ar 3`

-in 0 or 1	allow search engines to index your clip;
	  0 - no
	  1 - yes
		1 - yes	`-in 0`

-r 0 or 1	allow recording for RealPlayer Plus users;
	  0 - no
	  1 - yes
		0 - no	`-r 1`

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Preferences Options

Syntax	Description	Default Value	Example

-w 0 or 1	emphasize audio or video (SureStream recording only);
	  0 - emphasize audio
	  1 - emphasize video
		0 - audio	`-w 1`

-g 5 or 6	the version of RealPlayer the clip is compatible with (SureStream recording only); use one of the following numbers:
	  5 - RealPlayer 5.0 or later
	  6 - RealPlayer G2
		6 - RealPlayer G2	`-g 5`

-sc 0 or 1	selects the network protocol for the server connection; use one of the following numbers:
	  0 - connect using UDP (recommended)
	  1 - connect using TCP
		0 - UDP	`-sc 1`

-j <l>,<t>,<w>,<h>	set cropping values where l=left, t=top, w=width, and h=height	0,0,0,0	`-j 0,0,200,150`
-td <directory>	changes the temporary (scratch) directory used when creating RealMedia	/tmp	`-td /var/tmp`
-ow	if specified, existing target files will be overwritten if they have the same file name		
--help	displays help information		
--version	displays the installed version of RealProducer Plus and the serial number		

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Video Codec Options

Syntax	Description	Default Value	Example

-vb 0 or 1	variable bit rate encoding;
	  0 - no
	  1 - yes
		0 - off	`-vb 1`

-vl <seconds>	variable bit rate max latency; from 5 to 60 seconds	15 seconds	`-vl 30`

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Video Codec Options

Syntax	Description	Default Value	Example
-lp 0 or 1	loss protection; 0 - no 1 - yes	0 - no	`-lp 1`
-kf <milliseconds>	keyframe frequency; from 0-60000 milliseconds	10000 milliseconds	`-kf 20000`
-vc <video codec>	overrides the default video codec; use one of the following numbers: RV200 - RealVideo G2 RV201 - RealVideo G2 with SVT RV300 - RealVideo 8	RV300 - RealVideo 8	-vc RV200

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Examples

The following example records foo.wav into a RealMedia file for 28 and 56 Kbps audiences, audio set to voice only, file type set to SureStream, and "The Title" as the title of the clip. The output file defaults to foo.rm.

```
realproducer -i foo.wav -t 0,1 -a 0 -f 1 -b "The Title"
```

The next example records from a live video source to a RealServer with the same settings as above.

```
realproducer -l 3:1 -s myserver:4040/foo.rm -t 0,1 -a 0 -v 0 -f 1 -b "The Title"
```

Settings Configuration File

The Settings Configuration File option (-m) allows the user to specify a text file that contains the necessary target audience settings for the recording. Using a settings file allows you to save different settings that you use all the time, plus you can specify the exact codec used.

The parameters contained used for each target audience are as follows:

Settings File Parameters

Parameter	Description
TARGET	the target audience; see below for a list of values
TOTAL_BIT_RATE	total bit rate for the target audience

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Settings File Parameters (continued)

Parameter	Description
AUDIO_CODEC	the audio codec used for the target audience; see below for a list of values
VIDEO_CODEC	the video codec used to create streaming video; see below for a list of values (defalut = RV300)
MAX_FRAME_RATE	maximum frame rate, measured in frames per second (default = 15)

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Warning
Parameters must be in upper case.

The settings file contains a line for each target audience that the user wishes to record for. A sample configuration settings file for a SureStream recording would be as follows:

```
TARGET=0,TOTAL_BIT_RATE=20,AUDIO_CODEC=sipr0,VIDEO_CODEC=RV300,MAX_FRAME_RATE=7.5
TARGET=2,TOTAL_BIT_RATE=45,AUDIO_CODEC=sipr1,VIDEO_CODEC=RV300,MAX_FRAME_RATE=10
```

RealProducer Plus then takes these values and creates a RealMedia stream for the target audience specified in each line.

Warning
Using a settings configuration file overrides the audio format switch (-a) and the video codec switch (-vc).

Target Audience Values

0	28 Kbps Modems
1	56 Kbps Modems
2	Single ISDN
3	Dual ISDN
4	DSL/Cable Modem
5	Corporate LAN
6	256K DSL/Cable Modem
7	384K DSL/Cable Modem
8	512K DSL/Cable Modem

Audio Codec IDs

List of audio codecs

Codec name	Label	Frequency response	Description
sipr2	5 Kbps Voice	4 kHz	For speech-based video over 28 Kbps and 56 Kbps modem connections. If better sound quality is required, select the 6.5 Kbps Voice codec.
sipr0	6.5 Kbps Voice	4 kHz	For speech-based video over 28 Kbps and 56 Kbps modem connections.
sipr1	8.5 Kbps Voice	4 kHz	For speech over 14 Kbps modem connections, or speech-based video over Single and Dual ISDN connections.
sipr3	16 Kbps Voice	8 kHz	For speech over 28 Kbps and 56 Kbps modem connections, or speech-based video over Dual ISDN connections.
cook7	32 Kbps Voice	11 kHz	For speech over 56 Kbps modem and Single ISDN connections, or for speech-based video over LAN/DSL/Cable Modem connections.
cook14	64 Kbps Voice	20 kHz	For speech over Dual ISDN and LAN/DSL/Cable Modem connections.
cook8	6 Kbps Music	3 kHz	For music-based video over 28 Kbps and 56Kbps modem connections. If better sound quality is required, select the 8 Kbps Music codec.
cook0	8 Kbps Music	4 kHz	For music-based video over 28 Kbps and 56 Kbps modem connections.
cook1	11 Kbps Music	5.5 kHz	For music over 14 Kbps modem connections, or music-based video over Single ISDN connections.
cook2	16 Kbps Music	8 kHz	For music over 28 Kbps modem connections, or music-based video over Dual ISDN connections.
cook3	20 Kbps Music	10 kHz	For music over 28 Kbps modem connections, or music-based video over Dual ISDN connections.

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List of audio codecs (continued)

Codec name	Label	Frequency response	Description
cook15	20 Kbps Music - High Response	20 kHz	For high response music over 28 Kbps modem connections, or music-based video over Dual ISDN connections.
cook4	32 Kbps Music	16 kHz	For music over 56 Kbps modem connections, or music-based video over LAN/DSL/Cable Modem connections.
cook16	32 Kbps Music - High Response	20 kHz	For high response music over 56 Kbps modem connections, or music-based video over LAN/DSL/Cable Modem connections.
cook5	44 Kbps Music	20 kHz	For music over Single ISDN connections.
cook6	64 Kbps Music	20 kHz	For music over Dual ISDN and LAN/DSL/Cable Modem connections.
cook26	12 Kbps Stereo Music	3.9 kHz	RealAudio 8 : For stereo music-based video over 28 Kbps modem connections. Compatible with RealPlayer 8.0 and later. Previous versions of the RealPlayer will give the user the choice of updating in order to play RealAudio 8 streams.
cook17	16 Kbps Stereo Music	4.3 kHz	RealAudio 8 : For stereo music over 28 Kbps modem connections, or music-based video over Dual ISDN connections. Compatible with RealPlayer 8.0 and later.
cook9	20 Kbps Stereo Music	5 kHz	For stereo music over 56 Kbps modem connections, or music-based video over LAN/DSL/Cable Modem connections.
cook18	20 Kbps Stereo Music	8.6 kHz	RealAudio 8 : For stereo music over 28 Kbps modem connections, or music-based video over Dual ISDN connections.
cook19	20 Kbps Stereo Music High	9.9 kHz	RealAudio 8 High Response : For stereo music over 28 Kbps modem connections, or music-based video over Dual ISDN connections.

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List of audio codecs (continued)

Codec name	Label	Frequency response	Description
cook10	32 Kbps Stereo Music	8 kHz	For stereo music over 56 Kbps modem connections, or music-based video over LAN/DSL/Cable Modem connections. For use with RealPlayer G2 or greater.
cook20	32 Kbps Stereo Music	13.8 kHz	RealAudio 8 : For stereo music over 56 Kbps modem connections, or music-based video over LAN/DSL/Cable Modem connections.
cook21	32 Kbps Stereo Music High	13.8 kHz	RealAudio 8 High Response : For stereo music over 56 Kbps modem connections, or music-based video over LAN/DSL/Cable Modem connections.
cook11	44 Kbps Stereo Music	11 kHz	For stereo music over Single ISDNconnections.
cook22	44 Kbps Stereo Music	13.8 kHz	RealAudio 8 : For stereo music over Single ISDN connections.
cook23	44 Kbps Stereo Music High	16 kHz	RealAudio 8 High Response : For stereo music over Single ISDN connections.
cook12	64 Kbps Stereo Music	16 kHz	For stereo music over Dual ISDN and LAN/DSL/Cable Modem connections.
cook24	64 Kbps Stereo Music	16 kHz	RealAudio 8 : For stereo music over Dual ISDN and LAN/DSL/Cable Modem connections.
atrc0	66 Kbps Stereo Music	12.4 kHz	RealAudio 8 (ATRAC3) : For stereo music over Dual ISDN and LAN/DSL/Cable Modem connections.
atrc1	94 Kbps Stereo Music	15.1 kHz	RealAudio 8 (ATRAC3) : For stereo music over Dual ISDN and LAN/DSL/Cable Modem connections.
cook13	96 Kbps Stereo Music	20 kHz	RealAudio 8 : For stereo music over Dual ISDN and LAN/DSL/Cable Modem connections.
cook25	96 Kbps Stereo Music	16 kHz	RealAudio 8 : For stereo music over Dual ISDN and LAN/DSL/Cable Modem connections.
atrc2	105 Kbps Stereo Music	13.7 kHz	RealAudio 8 (ATRAC3) : For stereo music over Dual ISDN and LAN/DSL/Cable Modem connections.

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List of audio codecs (continued)

Codec name	Label	Frequency response	Description
atrc3	132 Kbps Stereo Music	16.5 kHz	RealAudio 8 (ATRAC3) : For high-quality stereo music over LAN/DSL/ Cable Modem connections.
atrc4	146 Kbps Stereo Music	16.5 kHz	RealAudio 8 (ATRAC3) : For high-quality stereo music over LAN/DSL/ Cable Modem connections.
atrc5	176 Kbps Stereo Music	19.2 kHz	RealAudio 8 (ATRAC3) : For archive quality stereo music.
atrc6	264 Kbps Stereo Music	22 kHz	RealAudio 8 (ATRAC3) : For archive quality stereo music.
atrc7	352 Kbps Stereo Music	22 kHz	RealAudio 8 (ATRAC3) : For archive quality stereo music.

(Table Page 4 of 4)

Video Codec IDs

List of video codecs

Codec name	Description
RV200	RealVideo codec compatible with older versions of RealPlayer.
RV201	RealVideo codec with SVT (Scalable Video Technology).
RV300	RealVideo 8.0 codec, compatible with RealPlayer versions 8.0 and above.